

WHAT IS CLAIMED IS:

1. An isolated polynucleotide molecule comprising:
  - (a) a nucleic acid molecule encoding an aspartate kinase (ask) polypeptide;
  - (b) a nucleic acid molecule encoding an aspartate-semialdehyde dehydrogenase (asd) polypeptide; and
  - (c) a nucleic acid molecule encoding a dihydrodipicolinate reductase (dapB) polypeptide.
2. The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding a complete or truncated diaminopimelate dehydrogenase (ddh) polypeptide.
3. The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding a complete or truncated ORF2 polypeptide.
4. The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding complete or truncated ddh, ORF2 and diaminopimelate decarboxylase (lysA) polypeptides.
5. The polynucleotide molecule of claim 4, wherein said polynucleotide molecule additionally comprises a P1 promoter element of SEQ ID NO:15.
6. The polynucleotide molecule of claim 5, wherein said P1 promoter element is adjacent to said nucleic acid encoding lysA.

7. The polynucleotide molecule of claim 1, wherein said ask, asd and dapB polypeptides are encoded by *Corynebacterium*, *Brevibacterium flavum* or *Brevibacterium lactovermentum*.

8. The polynucleotide molecule of claim 1, wherein said ask and asd polypeptides are encoded by the *ask-asd* operon of ATCC21529.

9. The polynucleotide molecule of claim 2, wherein said ddh polypeptide is encoded by *Corynebacterium*, *Brevibacterium flavum* or *Brevibacterium lactovermentum*.

10. The polynucleotide molecule of claim 3, wherein said ORF2 polypeptide is encoded by *Corynebacterium*, *Brevibacterium flavum* or *Brevibacterium lactovermentum*.

11. The polynucleotide molecule of claim 4, wherein said lysA polypeptide is encoded by *Corynebacterium*, *Brevibacterium flavum* or *Brevibacterium lactovermentum*.

12. The polynucleotide molecule of claim 1, wherein said dapB polypeptide is encoded by the coding region of the *dapB* gene of NRRL-B11474.

13. The polynucleotide molecule of claim 2, wherein said ddh polypeptide is encoded by the coding region of the *ddh* gene of NRRL-B11474.

14. The polynucleotide molecule of claim 3, wherein said ORF2 polypeptide is encoded by the coding region of the *ORF2* gene of NRRL-B11474.

15. The polynucleotide molecule of claim 4, wherein said *lysA* polypeptide is encoded by the coding region of the *lysA* gene of ASO19.

16. A vector comprising the isolated polynucleotide molecule of claim 1.

17. A host cell comprising said vector of claim 16.

18. The host cell of claim 17, wherein said cell is a prokaryotic cell.

19. The host cell of claim 17, wherein the cell is a eukaryotic cell.

20. The host cell of claim 17, wherein said host cell is a *Brevibacterium flavum*, *Brevibacterium lactofermentum* or *Corynebacterium glutamicum* cell.

21. The host cell of claim 17 wherein said host cell is an *Escherichia coli* cell.

22. A method for transforming a host cell comprising:

(a) transforming a host cell with the polynucleotide molecule of claim 1, wherein said isolated polynucleotide molecule is stably integrated into said host cell's chromosome; and

(b) selecting a transformed host cell.

23. A method for transforming a host cell comprising:

(a) transforming a host cell with the polynucleotide molecule of claim 1, wherein said isolated polynucleotide molecule is maintained in said host cell as extrachromosomal DNA; and

(b) selecting a transformed host cell.

24. A method of producing lysine comprising culturing said host cells of claim 17 in a culture medium, wherein said host cells produce lysine into said culture medium.

25. The polynucleotide molecule of claim 1, wherein said polynucleotide molecule does not comprise a nucleic acid molecule encoding any one of dihydrodipicolinate synthase (dapA), tetrahydrodipicolinate succinylase (dapD), N-succinylaminoketopimelate transaminase (dapC), N-succinyl-diaminopimelate desuccinylase (dapE) or diaminopimelate epimerase (dapF) polypeptides.